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Low-cost At-home Cardio Solutions for Patients During the Covid-19 Pandemic

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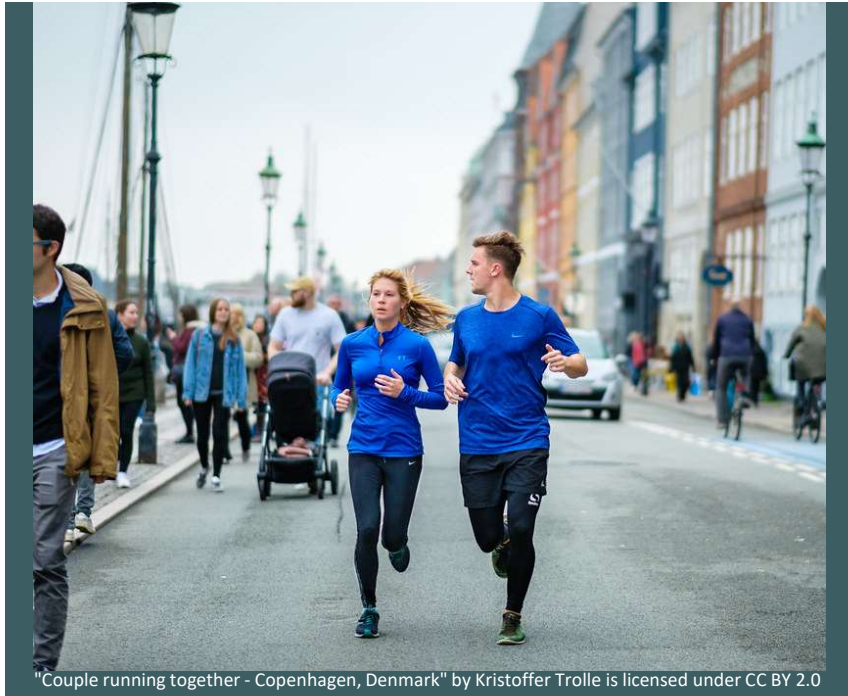


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Low-cost, at-home cardio solutions for patients during the Covid-19 pandemic

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COLCHESTER FAMILY PRACTICE

MARCH 2021

MENTOR: DR. ANTHONY WILLIAMS



2a. Problem Identification

Covid-19 has decreased patients' physical activity, as reported anecdotally and subsequently demonstrated in several studies.

- Castañeda-Babarro et al. (2020) found from their survey (N=3800) in Spain that:
 - Vigorous physical activities decreased by 16.8% ($p < 0.001$)
 - Walking decreased by 58.2% ($p < 0.001$)
 - Sedentary time increased by 23.8% ($p < 0.001$)¹
- Lesser et al. (2020) found from their survey (N=1098) in Canada that:
 - 40.5% of inactive individuals reported they were less active
 - 22.4% of active individuals reported they were less active²
- Fitbit analyzed its data from over 30 million users and found:
 - Step count for the week ending on March 22, 2020 compared to the previous year decreased from 7-28% across various countries. In the USA, step count decreased 12%.³

2b. Description of Need

- Covid-19 has disrupted patient's exercise routines
- It's difficult for patients to re-establish new routines
- Exercise is critical part of health maintenance
- New routines need to be:
 - Easily accessible
 - Match patient's physical ability
 - Fun for patient
 - Affordable



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3. Public Health Cost

National Statistics:

- Sedentary lifestyle contributes to obesity and heart disease. Based on data reported by the CDC, the public health costs of these conditions are:
 - Obesity: \$147 billion/year⁴
 - Heart disease: \$219 billion/year⁵
- Lack of exercise can also contribute to depression, which based on a study by Greenberg et al. (2015), costs roughly \$210.5 billion/year.⁶

Vermont Statistics:

The CDC Obesity Report for Vermont (2012) reported:

- Only 52.8% of adults get at least 300 min/wk moderate intensity OR 150 min/wk high intensity
- 20.2% report no physical activity at all in the last month
- 57.7% of residents are overweight; 23.2% are obese⁷

4. Community Perspective and Support

Interview with YMCA administrator:

- Covid-19 has led to isolation and sedentary lifestyle
- Virtual group fitness helps restore exercise routine
- In-person socialization translates to chatting online before/after class
 - Zumba community is especially strong
- Robust virtual exercise community with overwhelmingly positive feedback
- Participants have reported beneficial impact on mental and physical health

Interview with the Edge administrator:

- Covid-19 has changed how people interface with the gym
- Novel conversion of gymnasiums and tennis courts into group fitness rooms has allowed for more in-person classes
- Classes are capped to 24 people; each participant is provided 8x8 ft box with surrounding empty box
- There are virtual options, both pre-recorded and live offered at their gym
- Functional fitness classes are offered for seniors



"hotel PORTOBAY FALÉSIA . Gym" by PortoBay Trade is licensed under CC BY-ND 2.0

5. Intervention & Methodology

- Created a dot phrase that included:
 - Local Vermont options
 - Computer-accessed resources
 - Phone applications
- Target patient population: Young to middle aged adults with good mobility
- Highlighted free options

.covidexercise

The Covid-19 pandemic has made it hard for people to maintain their exercise routines. Here are a few resources to consider as you re-establish your routine. *Please note that we have no affiliation with these resources and they are entirely separate from our practice.*

Local Vermont Options

Greater Burlington YMCA: The YMCA offers many in-person and online classes that have modifications to accommodate all fitness levels. Several classes also have a robust social community, notably their Zumba class. Even virtually, participants chat before and after class. Virtual classes include Chair-Based Exercise, Gentle Yoga, Barre & Tone, Resist & Shred, and Hybrid Insanity (amongst many more).

The Edge: The Edge has a few virtual classes including Yoga Flow and Body Flow. They have adapted their gymnasium and tennis courts to suit in-person class of maximum 24 participants. Each participant is given an 8x8 foot box and must wear a mask.

Online Resources

Orangetheory (Free): Orangetheory fitness has a wide variety of at-home workouts that range anywhere from ten minutes to an hour. You can find these by searching for the Orangetheory Fitness channel on www.youtube.com.

Yoga with Adriene (Free): This YouTube resource has over 500 free yoga videos of various skill levels that emphasize self-care with a playful and fun perspective. You can find these by searching “Yoga with Adriene” on www.youtube.com.

Phone Apps

Nike Training Club (Free): Over 185 workouts including strength training, core workouts, and machine-free cardio sessions. You can filter workouts based on the equipment you have. You can find this app by downloading the “Nike Training Club” app to your phone.

Peloton: This app has pre-recorded and live workouts including strength, yoga, cardio, and meditation. You can sort videos based on length and difficulty. It does require a monthly fee, but you can try it first for thirty days before purchasing. You can find this by downloading the “Peloton – at home fitness” app to your phone.



"weight-loss-yoga-synergybyjasmine.com" by Synergy by
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6. Results/Responses

- Background information and dot phrase distributed to Colchester Family Practice providers
- Dot phrase uploaded to EMR for easy access to add to after-visit summary
- Positive response from providers regarding dot phrase content and ease of integration into workflow

7. Evaluation of Effectiveness & Limitations

Evaluation of Effectiveness:

- Formal study design:
 - Enroll all patient in study that are reporting less than 30 minutes of exercise per week.
 - Provide dot phrase to roughly half of these patients, randomly selected by day of week of appointment to reduce potential provider bias.
 - Three months later, call all patients for min/week of exercise over last week.
 - Perform T-test analysis to compare average change in minutes exercised between the intervention and control groups.

Limitations:

- Provider bias
 - Providers may counsel differently based on whether using traditional method or dot phrase.
- Hawthorne Effect
 - Patients may report more minutes of exercise due to enrollment in study.



8. Recommendations for Future Projects

- Expand dot phrase to incorporate patient and provider suggestions
- Create multiple dot phrases for specific populations (e.g. senior, beginner, advanced)
- Survey Vermonters to determine how their physical activity level has changed over the pandemic

9. References

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10. Interview Consent Form

Interview Consent Form

Family Medicine Clerkship

Larner College of Medicine at the University of Vermont

Thank you for agreeing to be interviewed. This project is a requirement for the Family Medicine clerkship. It will be stored on the Dana Library ScholarWorks website. Your name will be attached to your interview and you may be cited directly or indirectly in subsequent unpublished or published work. The interviewer affirms that he/she has explained the nature and purpose of this project. The interviewee affirms that he/she has consented to this interview.

Interviewee Name: _____ Signature: _____ Date: _____

Interviewer Name: _____ Signature: _____ Date: _____

